Volume 14

Study G-I
Study A-I
Job R-IV-D

STATE OF ALASKA

William A. Egan, Governor

Annual Progress Reports for

INVENTORY AND CATALOGING

INVESTIGATIONS OF PUBLIC FISHING ACCESS AND AQUATIC HABITAT REQUIREMENTS

DISSEMINATION OF INFORMATION COLLECTED ON DOLLY VARDEN

by

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RESEARCH PROJECT SEGMENT

State: Alaska

Project No.: F-9-5 Name: Sport Fish Investigation of Alaska

Study No.: G-I Study Title: Inventory and Cataloging.

Job No.: G-I-D Job Title: Inventory, Cataloging and Population Sampling of the Sport Fish and Sport Fish Waters of the Cook Inlet Drainage.

Period Covered: April 16, 1972 to April 15, 1973.

ABSTRACT

Basic surveys were completed on five lakes of the Stephan Lake Complex. Summaries of gillnet sampling volumetric data are presented.

Volumetric measurements are presented for two lakes within the Nancy Lake State Recreation Area.

Pre-chemical surveys were made on Lucille and Memory lakes and the volumetric data are presented.

Access sites on four lakes were obtained through negotiation with private indivduals.

RECOMMENDATIONS

Emphasis should be directed toward the following activities:

1. Basic surveys, incorporating physical, chemical and biological data, should be made on lakes east of the Talkeetna Spur Road.
2. Volumetric measurements of Tigger, X and Y lakes.

OBJECTIVES

1. To determine and record the environmental characteristics of certain potential fishery waters of the job area and to develop and evaluate plans for the enhancement of resident fish stocks.
2. To assist as required in the investigation of public access status to the area's fishing waters and to make specific recommendations for selection of sites for segregation.

3. To evaluate multiple water use development projects (public and private) and their effects on the area's fishing waters, and for the proper protection of the sport fish resources.
4. To make recommendations for the proper management of various sport fish waters in the area and to direct future studies.

TECHNIQUES USED

Fish populations were sampled using 125' X 6' monofilament gillnets with variable mesh ranging from 3/4" - 2" bar measure. Either one or two nets were set for an over-night period.

Volumetric surveys were made by establishing transect lines and taking repeated depth measurements using a Ross P-100 fathometer. Reference markers were placed at each lake to allow detection of surface level changes.

Volumetric calculations were determined from work maps using a K & E Planimeter.

All fish lengths are expressed as fork length measurements.

FINDINGS

Lake Surveys in the Stephan Lakes Complex

The Stephan Lakes Complex is located south of Big Lake near the Burma Road. This complex may be thought of as two smaller systems, the lakes in each system being interconnected by inlets and/or outlets. One system comprises Stephan, Anna and North Sevenmile lakes; the other includes Sevenmile, West Sevenmile and South Sevenmile lakes. The complex drains into Goose Creek, which empties into Goose Bay.

Basic surveys were initiated on four lakes in the Stephan Lake complex: Sevenmile, North Sevenmile, South Sevenmile and West Sevenmile lakes. Volumetric measurement of Anna Lake was conducted in the summer of 1972 while the basic survey was completed in 1970.

Surveys emphasized volumetric calculations, definition on geographical characteristics and established the presence or absence of fishes. Rainbow trout, Salmo gairdneri, and silver salmon, Oncorhynchus kisutch, were present in three lakes, long nose suckers, Catostomus catostomus, were found in two lakes and threespine sticklebacks, Gasterosteus aculeatus, were present in all surveyed lakes. The results of gillnet sampling are summarized in Table 1.

At present, there is minimum sport fishing effort in the Stephan Lake complex, but due to recent land development, including a subdivision bordering Stephan

Lake, an increase in the recreational use of the area is expected. The shallow nature of the lakes, however, and the presence of inlets and outlets within the lake complex, make chemical rehabilitation and management of lakes difficult.

Lake Volumetric Surveys

The location and volumetric data of all lakes surveyed in 1972 are presented in Table 2.

Surveys within the Nancy Lake State Recreation Area:

Two lakes in the Nancy Lake State Recreation Area, James and Owl lakes, were not included in the volumetric surveys made during the summer of 1971 but were completed during 1972.

James and Owl lakes are considered suitable for rehabilitation and management only if developed concurrently and if considerable alteration to the outlet of Owl Lake precedes enhancement.

Lake Lucille:

Lake Lucille, located immediately west of the town of Wasilla, has a history of rehabilitation and stocking. The lake was first rehabilitated in 1956 and then again in 1963, prior to which an outlet barrier was constricted. Plants of rainbow trout and/or silver salmon were made annually until 1968 when it was determined that a reinfestation of sticklebacks had occurred. No fish have been stocked since 1968.

A definitive volumetric survey was completed and repairs to the outlet barrier were made previous to chemical treatment in the fall of 1972.

Memory Lake:

Memory Lake is located approximately four miles north of Wasilla on the Schrock-Pittman Road. It is an isolated lake without inlets or outlets and is presently scheduled for chemical rehabilitation in the fall of 1973.

Larson Lake:

An attempted volumetric survey of Larson Lake was unsuccessful due to the extreme depth of the lake. The fathometer used during the survey would not record depths in excess of one hundred and thirty feet, leaving a significant portion of the lake unmeasured.

Table 1 Gill Net Summaries of Lakes Surveyed, Stephan Lakes Complex, 1970 and 1972.

Lake	Survey Date	Species*	No. Fish	Length Range (mm)	Mean Length	Catch/hr.***
Anna	7/17/70	SS	11	211-455	398	0.25
		RT	2	561-665	613	0.05
		LNS	6	Not Measured		0.14
Sevenmile	6/15/72	SS	7	241-390	304	0.17
N. Sevenmile	6/16/72	LNS	18	Not Measured		0.75
S. Sevenmile	6/16/72	RT	1	112	---	0.05
W. Sevenmile	6/15/72	SS	5	235-578	298	0.11
		RT	2	102-108	105	0.04

* SS-silver salmon, RT-rainbow trout, LNS-long nose sucker.
** Catch per gill net hour using 125X6-foot variable mesh gill nets.

Table 2 Location and Volumetric Data of Lakes Surveyed, Matanuska-Susitna Valleys, 1972.

Lake	Location	Surface Acres	Volume (Acre ft.)	Max. Depth (feet)	Average Depth (feet)
Anna	T16N, R4W, S 22	109	1270	27	12.5
Sevenmile	T16N, R4W, S 23	158	970	14	6.1
N. Sevenmile	T16N, R4W, S 14	75	570	16	7.6
S. Sevenmile	T16N, R4W, S 23-26	26	98	7	3.7
W. Sevenmile	T16N, R4W, S 23	23	189	20	8.4
James	T18N, R5W, S 24	104	988	50	9.5
Owl	T18N, R4W, S 19	60	538	20	9.0
Memory	T18N, R1W, S 23-23	84	607	20	7.2
Lucille	T17N, R1W, S 8-9	362	2051	23	5.7

Access

Through negotiation with private individuals access was obtained on Anna, North Sevenmile, Stephan and Memory lakes. Memory Lake is scheduled for chemical rehabilitation and stocking.

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